

No. 6.— *Birds from Darien.*

By OUTRAM BANGS AND THOMAS BARBOUR.

THE latter author, with Mr. W. S. Brooks, spent several months this spring (1922) in Panama. Part of the time was occupied in a journey to the Sapo Highlands and to the heavy forests of the Sambú Valley, previously unvisited by a zoölogist and one of the least known areas of all tropical America.

The original plan was to collect mammals and reptiles but having the opportunity to engage the services of Mr. C. F. Underwood while in Costa Rica, it was decided to attempt a collection of birds. Unfavorable weather conditions and the illness of Mr. Underwood made it undesirable to prolong this work. Nevertheless it is only proper to record that, working under conditions very different from the luxurious bird collecting of Costa Rica, with a veteran corps of trained assistants, and camping here, under the most difficult conditions, Mr. Underwood preserved every single bird worth saving. We worked under high pressure and had some good Chochoano Indian shooters, but the number of days devoted to ornithology was only about seventeen. Since nearly seven hundred birds were collected it will readily be understood that some of the days were long and well occupied. In one day eighty-seven birds were shot and skinned. One hundred and fifty-nine species are represented in the collection. It would have been easy to increase this list very considerably. The clearings about the village of Garachiné and about the Indian plantations on the Sambú swarmed with many species of birds characteristic of the open country. Many forms were so familiar to us all and so well represented in collections that our stays about the clearings were devoted to other activities. The collection really represents an attempt to obtain only those species unrepresented in the M. C. Z., so far as our knowledge went. Inevitably, however, many common species were preserved.

Field notes, in many cases of no great value, are appended. The only excuse for so doing is the paucity of data concerning the region and the fact that so many collections of birds are reported upon by persons who have not had the good fortune to share in securing the material.

Collections of mammals, reptiles, amphibians, and fishes were also obtained and reports upon these series, together with a general ac-

count of the country and its inhabitants, have been or will be published elsewhere.

Several occasions stand out as specially memorable. The chance to see two great flights of hawks (probably Swainson's) was very pleasing. One afternoon (16 April) coming down the Sambú in dugouts we noticed what we first believed to be an enormous gathering of turkey buzzards but in a short time the whirling or wheeling cloud passed westward near enough for us to see that what we had mistaken for buzzards was in reality an enormous crowd of hawks. They were very high, the day happened to be finely clear, and several thousand were visible. A few days later another migration was observed from a foothill of Mt. Sapó but the number of hawks was distinctly less.

On another afternoon, when resting after a steep climb, at the foot of a gigantic espavé tree, we heard a noise overhead and looking up were surprised to see the great crested head of a Harpy Eagle looking down at us. Hastily pushing in 2's I (Barbour) fired both barrels but the bird was very high and only a wing was broken. It had just sufficient power of flight to launch out from the tree top and in a second it was away, down the slope of an almost perpendicular valley which we searched for hours without avail. Although we had several fine views of flying Harpys we never got another shot, and losing this bird was a bitter disappointment.

In this paper we follow the order used by Ridgway in the Birds of North and Middle America (Bull. 50, U. S. N. M.).

It is also to be noted that whenever Chapman is referred to, with no specific reference, we allude to *The Distribution of Bird-Life in Colombia* (Bull. Amer. mus. nat. hist., 1917, 36), and similarly with the use of Hellmayr's name, to *A Contribution to the Ornithology of Western Colombia* (P. Z. S. London, 1911).

In conclusion it gives us great pleasure to thank President Porras and the Señores Alfaro and Morales of his Cabinet in Panama; Dr. R. P. Strong and Major Bocock, Superintendent of the Hospital Santo Tomás and to many other officials and friends both here and in Central America who gave us help and advice.

Messrs. Nelson, Chapman, Todd, and Penard have also aided us by loaning specimens which have been invaluable, in connection with our material in Cambridge, in arriving at the taxonomic conclusions which we have reached.

Finally it may be well to add a word regarding the location of the collecting stations named. Esnápe was a camp on a stream of that name situated several hours march northeast of the junction of the

Sambú and Sabalo Rivers, Lat. $8^{\circ} 02' 13''$ and Long. $78^{\circ} 12' 00''$. The Quebrada Esnápe is said to be tributary to the Rio Taimití. Jesusito refers to camps at several points in the lowland forest on the Rio Jesusito which rises in the Sapo Mountains. It is one of a series of small streams which have their source in the highlands and flow toward the Sambú Valley, but which apparently, in this case, is not tributary to the Sambú but probably empties in a marsh drained by the Rio Celorio. Mt. Sapo refers to stations on the headwaters of the Rio San Antonio, a stream which enters the sea near the town of Garachiné. The river drains the western slopes of Mt. Sapo itself. The collections are all representative of the fauna of the lower Tropical Zone, the stations being all in the rain forest below 1500'.

ARDEIDAE.

1. *CANCHROMA ZELEDONI* Ridgway.

One skeleton, Jesusito.

Only a single Boat-billed Heron was seen during the entire trip and this was shot while night hunting with an acetylene lamp. It stared stupidly at the light and made no effort to escape.

2. *PILHERODIAS PILEATUS* (Boddaert).

One adult female, Jesusito, 6 April, 1922.

This appears to be the first record for Panama. It has already been recorded from western Colombia by Chapman.

A pair of these lovely night herons was observed several times near the lower camp on the Jesusito River. They were rather shy and appeared to be fairly active by day. Only one of the pair was killed.

CATHARTIDAE.

3. *SARCORHAMPHUS PAPA* (Linné).

One adult male, Pacora, April, 1922.

The chief of the Canal Zone Fire Department, Captain Brown, found this splendid vulture sitting on an open plain while hunting near Pacora. He approached the bird and found it to be perfectly blind, although its eyes gave no appearance of being abnormal. He kept it alive for some time and finally gave it to the Museum party.

King vultures were seen several times flying low over the tree tops in the Sambú Valley but none were shot.

AQUILIDAE.

4. *IBYCTER AMERICANUS AMERICANUS* (Boddaert).

One adult female, Jesusito, 13 April, 1922.

This skin affords a wing-length of 355 mm., which places it as the small form representative of tropical South America, and which Swann has already recorded as being found northward to Panama.

This remarkable hawk was a constant source of surprise. Small parties of four or five were often encountered in the deep woods. They flapped sluggishly for short distances when disturbed uttering the most unearthly shrieks. They were feeding in the fruit trees and reminded one far more of macaws, in voice and actions, than of hawks. The Panamanians call them witches (*brujos*) and do not consider them at all as being in the category of eagles or other birds of prey.

About the Mt. Sapo camp small flocks of *brujos* appeared every morning and evening flying up and down the steep hillsides just above the forest, screaming like macaws all the while.

5. *RUPORNIS MAGNIROSTRIS RUFICAUDA* (Sclater and Salvin).

One adult male, Jesusito, 7 April, 1922.

6. *FALCO ALBIGULARIS* Daudin.

Two adults, male and female, Jesusito, April, 1922.

Swann, reluctantly to be sure, recognizes three races of the White-throated Bat Falcon. We, however, detect no geographical variation in the species and cannot allow Chubb's two forms.

Occasionally, just at dusk, one of these hawks would dart past the lower Jesusito camp which was on a rough pebbly beach across the stream from an old abandoned Indian banana plantation. The pair secured were shot as they flashed by, to the intense excitement of our Chocoano companions.

TINAMIDAE.

7. *TINAMUS MAJOR CASTANEICEPS* Salvadori.

Two adult females, Jesusito, April, 1922.

Many of the large tinamous were killed for food and were delicious. The Indians had small difficulty in securing specimens but neverthe-

less they were very shy, having been persistently hunted. At dawn and eve their protracted and musical cry, oft repeated *in crescendo*, was one of the forest sounds which serve the Indians as most exact time-markers.

8. CRYPTURUS SOUI PANAMENSIS Carriker.

One adult female, Jesusito, 9 April, 1922.

The little tinamou was far rarer and far less shy than its larger ally. The Indians brought in a number, shot at such short range that they were impossible to preserve.

CRACIDAE.

9. CRAX GLOBICERA Linné.

One adult female, Jesusito, 13 April, 1922.

Miller and Griscom (*American museum novitates*), no. 25, p. 7, 1921, discredit *Crax panamensis* Ogilvie Grant, saying that in series all characters of that supposed species break down, and that it is not separable from *C. globicera* of Mexico to Honduras.

The pavones were rare, very rare, and it was only by making long excursions from the upper Jesusito camp far into the Sapo Hills that an occasional pavon could be secured for food.

10. PENELOPE CRISTATA (Linné).

One adult, male, Jesusito, 15 April, 1922.

The same remarks apply to this species. The Indians prefer the flesh of these birds to any other and have hunted them persistently for generations. In the region of the Rio Pavarondó near the Colombian frontier, where there are fewer Chocoanos, all game is said to be much more common.

ODONTOPHORIDAE.

11. ODONTOPHORUS GUANENSIS PANAMENSIS Chapman.

Four specimens, adults both sexes, Mt. Sapo and Jesusito, April, 1922.

The Panamanians call this bird the "Mulatto Dog" (*Perro Mulato*),

though the connection is not easy to see. About equally abundant with the following species, they were singularly tame and were often seen, in pairs, walking about camp in the most unconcerned fashion.

12. RHYNCHORTYX CINCTUS CINCTUS (Salvin).

Seven specimens, adults of both sexes, Mt. Sapo, April, 1922. Two downy young were also preserved.

When camp was quiet, as it sometimes was, these little quail often appeared, walking in pairs, and when disturbed ran away to some thicket. Neither this species, nor the preceding, were ever seen to take flight.

RALLIDAE.

13. ARAMIDES CAYANEA CAJANEA (P. L. S. Müller).

One adult female, Jesusito, 12 April, 1922.

We are unable, with a very large series of specimens, to verify a single character of the so-called *Aramides cajanea salmoni* Chubb, of northern Colombia and Panama, and cannot satisfactorily separate birds from that general region from those from Guiana. A recognizable, insular form, however, *A. c. latens* Bangs and Penard, is found on Pearl Island, in the Bay of Panama.

Along the Sambú wood rails were often heard calling at dusk and during the early night. Away from the main stream of the river they were far more rare, indeed were but very seldom heard and the one female, killed by an Indian, was the only one which was brought to camp.

COLUMBIDAE.

14. LEPTOPTILA CASSINI CASSINI Lawrence.

Six adults, both sexes, Mt. Sapo, Jesusito, and Rio Esnápe, April, 1922.

Pigeons of all sorts were scarce in the high forest although passing up and down the Sambú, especially through the mangroves, numbers of individuals of certainly three or more species were very conspicuous.

PSITTACIDAE.

15. *EUCINETUS HAEMATOTIS COCCINEICOLLARIS* (Lawrence).

One adult, female, Jesusito, 9 April, 1922.

The little red collared parrots were not very abundant. However, in common with the other species, they fed in such gigantic trees that they were not easily observed and identified.

16. *PIONUS MENSTRUUS* (Linné).

One adult (sex not determined), Jesusito, April, 1922.

Flocks of this species passed every day over the camp on the lower Jesusito at night-fall and about dawn. They whirred overhead, band after band, until the whole forest resounded with their screams and ordinary conversation was next to impossible. Whence they came or where they went we never knew, and these blue parrots seldom stopped to rest where we could observe them.

17. *AMAZONA FARINOSA INORNATA* (Salvadori).

One adult, female, Jesusito, 10 April, 1922.

In contrast to the preceding species this great plain looking green parrot roosted in myriads near the lower Jesusito camp. They stayed about for some time in the morning to feed, shrieking and chattering the while, but almost always far out of range of our twelve bore, so high were the high tree-tops. About eight every morning they flew toward the hills, returning late in the afternoon, occasionally accompanied by a few pairs of macaws none of which were ever shot.

CUCULIDAE.

18. *PIAYA CAYANA THERMOPHILA* Sclater.

One adult female, Mt. Sapo, 24 April, 1922.

This specimen is not different from the average of skins from Costa Rica and the Canal Zone of Panama, and does not seem in any way to approach *P. c. nigricrissa* (Cabanis) of western Ecuador and West Colombia.

This cuckoo is rare in the deep forest. The only one shot chanced to light in some creepers at noon one day while watch was being kept under the "Cotinga Tree" to be mentioned later.

MOMOTIDAE.

19. *MOMOTUS SUBRUFESCENS RECONDITUS* Nelson.

Three adult males, Rio Esnápe, April, 1922.

The first of these to be secured was caught in a steel trap set at the mouth of its enormous nesting burrow.

20. *UROSPATHA MARTII SEMIRUFA* (Selater).

Three adults, male and two females, Mt. Sapo, April, 1922.

This and the preceding species of motmots were common and were heard daily calling during the hot still noon hours. Much larger series could easily have been secured.

21. *ELECTRON PLATYRHYNCHUS MINOR* (Hartert).

One adult, female, Jesusito, 9 April, 1922.

This specimen, with a culmen of 39 mm. differs in no way from (eight examples) birds from Costa Rica, and western Panama. Chapman has already pointed out that *E. p. suboles* Nelson, was either based on a slightly abnormal individual, or has a very restricted distribution which seems impossible as it is a species of the Tropical Zone.

This curious, broad-billed motmot was very rare and no other individual was secured or seen.

22. *HYLOMANES MOMOTULA OBSCURUS* Nelson.

One adult male, Mt. Sapo, 24 April, 1922.

An aged negro, armed with an ancient French muzzle loader, brought this motmot to camp one day. He said that he had killed it high on the slopes of the Cerro de Sapo itself.

ALCEDINIDAE.

23. *CHLOROCERYLE AMAZONA* (Latham).

One adult, female, Jesusito, 12 April, 1922.

This, and the two following species, were all abundant and many could have been secured. In general kingfishers were confined to the swift clear woodland torrents and were seldom seen about the sluggish Sambú or the lower Jesus, both streams having water the consistency and color of pea-soup.

24. *CHLOROCERYLE AMERICANA ISTHMICA* (Goldman).

Two adults, male and female, Mt. Sapo and Jesusito, April, 1922.

25. *CHLOROCERYLE INDA* (Linné).

Four adults, both sexes, Jesusito, April, 1922.

BUCCONIDAE.

26. *NOTHARCUS PECTORALIS* (Gray).

One adult, female, Rio Esnápe, 3 April, 1922.

A single specimen brought to camp by an Indian hunter.

27. *MALACOPTILA PANAMENSIS PANAMENSIS* Lafresnaye.

Four adults, both sexes, Mt. Sapo, Rio Esnápe, and Jesusito, April, 1922.

This fine bucco was met with at most of the camps, but was rare and all of the individuals seen by the members of the party were secured.

28. *MONASA PALLESCENS PALLESCENS* Cassin.

Three adults, male and two females, Jesusito, April, 1922.

These vary among themselves as to the shade of gray on the wing-coverts and also as to the grayness or blackness of the throats and chests. We are unable to distinguish them, either by color or size, from skins from Antioquia, identified by Chapman as *pallescens*.

In the deep woods these beautiful birds were far from common but about the Indian habitations they were very abundant. At the house of Churima, where several nights were passed, they might be seen at any time dusting in the little pathway which led to the canoe landing or perched about the house almost as tame as the little paraquets which crawled about playing with the Indian children.

29. *NONNULA FRONTALIS PALLESCENS* Todd.

Eight adults, both sexes, Jesusito and Rio Esnápe, April, 1922.

This series agrees with skins already in M. C. Z. from the Canal Zone. The series presents some variation in color but on the whole is

much paler than old "Bogota" skins. Some time ago Bangs and Penard compared Canal Zone skins with the specimens sent them by Todd, upon which *pallescens* (type-locality, Fundacion, Santa Marta, Colombia), was founded, and found them to agree essentially. There is a doubt in our minds as to Todd's having selected the right form for his new name; provided, however, there actually are two forms.

The little Nonnulas were never observed except in the darkest and dampest of lowland woods.

GALBULIDAE.

30. JACAMEROPS AUREA PENARDI, subsp. nov.

One adult, male, Rio Esnápe, 3 April, 1922.

TYPE.—M. C. Z. 116,609 adult ♀, Costa Rica: Carrillo, 19 November, 1898. C. F. Underwood.

CHARACTERS.—Similar to *J. a. aurea* (P. L. S. Müller) of Surinam, but with a much more slender bill; colors about the same except that in the northern form the lower surface of the tail is perhaps rather more purplish, less greenish.

MEASUREMENTS.

No.	SEX	LOCALITY	WING	CULMEN TO BASE OF FOREHEAD	WIDTH OF BILL AT NOSTRIL
<i>J. aurea aurea</i> (P. L. S. Müller).					
47,855	♀	Brazil: "Amazons"	113	49	13
Penard Coll.	♀	Surinam: Paraku Saramacca	114	51	13
"	"	" " "	111	52	13
<i>J. aurea penardi</i> Bangs and Barbour.					
116,608	♂	Costa Rica, Carrillo	111	51	12
116,609	♀	" " "	107	49	11
46,445	♀	Panama, Line of R.R.	108	47	11
87,472	♂	" Rio Esnápe	112	49	11.5

REMARKS.—We have named this northern form of *J. aurea*, which ranges from the Caribbean slope of Costa Rica south at least to eastern Panama, in honor of our colleague Thomas E. Penard, who has lent us two fine topotypes of the typical form, and has kindly helped in the preparation of this paper with the loan of other specimens and with many suggestions on points of nomenclature, etc.

Having, by chance, previously concluded that this form should be separated, we turned to Ridgway's Birds of North and Middle America and found that, in reality, he had already called attention to the very slender bill of the northern form.

On comparison the bill in the two forms is seen at once to be so obviously broad in the southern and so slender in the northern that we consider that they must be separated on this character alone. Measurements, unfortunately, do not show these differences very well.

The splendid giant jacamá was killed among the very first birds taken and although afterward constantly sought, no other example was ever seen.

31. BRACHYGALBA SALMONI Selater and Salvin.

One somewhat immature male, Jesusito, 7 April, 1922.

Directly across the stream and right opposite the lower Jesusito camp was a rather low dead tree and on this, every day, perched some small jacamás, all obviously immature. We shot them all, but in spite of many sharp Indian eyes only one was ever found, so thick were the nettles and thorny creepers into which they fell. The adults were never seen, although watched for daily.

RAMPHASTIDAE.

32. PTEROGLOSSUS TORQUATUS TORQUATUS (Gmelin).

Two adults, male and female, Jesusito, 9 April, 1922.

These gaudy little toucans were abundant and as they were stupid and fed in rather low trees many were killed to eat.

33. SELENIDERA SPECTABILIS Cassin.

Four adults, both sexes, Mt. Sapo, April, 1922.

This toucan was much rarer than the preceding, but equally tame.

34. RAMPHASTOS PISCIVORUS BREVICARINATUS Gould.

One skeleton, Jesusito.

The big yellow-breasted toucans were common everywhere. They sounded like amphibians, not birds, and looked like tiny bow heavy airplanes as they flapped and then sailed, often for long distances, high

over the forest. They were great favorites for food, and though in reality not very shy they flew so high they were by no means easy to secure.

CAPITONIDAE.

35. CAPITO MACULICORONATUS PIRRENSIS Nelson.

Three adult males, Mt. Sapo, April, 1922.

Another beautiful species, never seen except when it visited the "Cotinga Tree." (*Cf. sub Cotinga naterreri*).

PICIDAE.

36. MELANERPES PUCHERANI PUCHERANI (Malherbe).

Two specimens, adult male and immature male, Mt. Sapo and Jesusito, April, 1922.

Small woodpeckers were often heard and seen but they were usually so high that it was quite impossible to kill them.

37. CELEUS LORICATUS MENTALIS Cassin.

One adult female, Mt. Sapo, 21 April, 1922.

38. CEOPHLOEUS LINEATUS MESORHYNCHUS Cabanis and Heine.

One adult male, Rio Esnápe, 3 April, 1922.

This big woodpecker seems to have been rarer than the following species. They were not differentiated in the field, however, and large woodpeckers in general were much more abundant than the smaller species.

39. CAMPEPHILUS MALHERBEI Gray.

Five adults, both sexes, Rio Esnápe, and Jesusito, April, 1922.

TROGONIDAE.

40. CURUCUJUS MELANURUS MACROURUS (Gould).

Four adults, two males, two females, Jesusito, April, 1922.

Four species of trogons were collected, they all seemed about equally abundant and the usual difficulty was encountered in getting decent

specimens. The Curcujus and true Trogon were only found in the lowland forest. The Chrysotrogon only at some distance up in the Sapo Hills. The latter species sheds its plumes when shot, even more readily than the others.

41. *TROGON STRIGILATUS CHIONURUS* Sclater and Salvin.

One adult female, Jesusito, 12 April, 1922.

42. *TROGONURUS CURCUCUI TENELLUS* (Cabanis).

Three adults, male and two females, Mt. Sapo and Río Esnápe, April, 1922.

These appear to be quite like birds from the Canal Zone and from Costa Rica and show no approach to *T. c. cupreicauda* Chapman, of western Colombia.

43. *CHRYSOTROGON CALIGATUS CALIGATUS* (Gould).

Two specimens, male and female, Mt. Sapo, April, 1922.

TROCHILIDAE.

44. *EUTOXERES AQUILA SALVINI* Gould.

One adult, female, Mt. Sapo, 20 April, 1922. W. S. Brooks.

The only specimen seen, and the same site was visited again and again, was taken while feeding on the red flowers of one of the small species of banana-like plants.

45. *PHAETHORNIS GUYI CORUSCUS* Bangs.

Three females, Mt. Sapo, April, 1922.

This was one of the solitary hermits of the dark damp groves of "tagua" or ivory nut-palms. The two following species were found in similar situations and while a good many were seen, they were so active and made such long erratic flights that they were by no means easy to collect. They visited none of the flowering trees and shrubs which were regularly watched for hummingbirds. The Threnetes was similar in habits.

46. *PHAETHORNIS LONGIROSTRIS CASSINI* Lawrence.

Three adults, both sexes, Río Esnápe and Jesusito, April, 1922.

Simon, the latest authority on the Hummingbirds (*Historie natu-*

relle des Trochilidae, 1921), sinks *P. longirostris cephalus* (Bourcier and Mulsant) type-locality Rio San Juan, Nicaragua, into the synonymy of *P. longirostris longirostris* (Lesson and Delattre), type-locality Guatemala, and recognizes as a distinct species *P. cassini* Lawrence, type-locality Turbo, giving as its range northern Colombia to Veragua. It is, of course, true that specimens from extreme eastern Panama are much more different from true *P. longirostris* than are birds from Nicaragua and Costa Rica, in fact many specimens from the latter countries are barely distinguishable from *P. longirostris longirostris* of Guatemala.

We cannot accept *cassini* as a distinct species, though recognizing it as a subspecies and allowing *cephalus* to stand as a rather poorly characterized intermediate form.

47. PHAETHORNIS ADOLPHI NELSONI, nom. nov.

Phaethornis adolphi fraterculus Nelson, Smithsonian misc. coll., 27 September, 1912, 60, no. 3, p. 9. Type-locality Cana, Panama. Not *Phaethornis fraterculus* Gould, Monogr. Troch., 1861, 1, p. 18.

Two adults, female and sex not determined, Jesusito, April, 1922.

48. THRENETES RUCKERI DARIENENSIS, subsp. nov.

Two adults, male, Mt. Sapo, 23 April, 1922.

TYPE.—M. C. Z. 87,511 adult ♂, E. Panama: Mt. Sapo, 23 April, 1922. Barbour, Brooks, and Underwood.

CHARACTERS.—Similar to *T. r. fraseri* (Gould) of Ecuador and western Colombia, and with similar dark green upper parts, but with the cinnamon throat-patch much larger and brighter and with the belly much paler and clearer gray. Similar also to *T. ruckeri ruckeri* (Bourcier), (Nicaragua to western Panama) but upper parts dark green instead of bronzy green; and belly gray, not buffy.

Chapman mentions the characters of this well-marked form and although he appears to have had plenty of material he did not name it.

49. CHALYBURA BUFFONI MICANS, subsp. nov.

Eighteen adults, both sexes, Mt. Sapo and Jesusito, April, 1922.

TYPE.—M. C. Z. 87,514 adult ♂, E. Panama: Mt. Sapo, 25 April, 1922. Barbour, Brooks, and Underwood.

CHARACTERS.—Similar to *C. b. buffonii* (Lesson) of the Magdalena Valley, (common in Bogota collections) but adult male with the tail,

including middle rectrices, blue-black (a few skins only in the large series before us from eastern Panama and western Colombia have some slight greenish at base of middle rectrices and along the extreme outer edges of other rectrices, quite different from the dull, bronzy middle rectrices and the other extensively bronze rectrices, in *C. b. buffoni*) and underparts paler and much more bluish green. From *C. b. acneicauda* Lawrence of Venezuela and the Santa Marta Region of Colombia the new form differs at once in its blue-black instead of green middle rectrices. Size similar to that in the other race.

This is another well-marked subspecies to the characters of which Chapman has already called attention but which he did not name. It seems to us too different from the other subspecies ever to be confused with any of them. Its range extends from the Canal Zone in Panama to western Colombia.

This big, mealy green hummer was a common visitor to low flowering shrubs near the two camps on the Jesusito and on Mt. Sapo. It was very abundant, though far more males were seen than females.

50. *KLAIS GUMETI* (Boureier and Mulsant).

One immature male, Mt. Sapo, 21 April, 1922.

51. *DAMOPHILA PANAMENSIS* Berlepsch.

Five adults, both sexes, Jesusito, April, 1922.

This species and the following were taken at flowering shrubs which they visited at all hours of the day in common with the Chalybura.

52. *POLYERATA AMABILIS* (Gould).

Eighteen adults, both sexes, Jesusito, April, 1922.

53. *THALURANIA FANNYI FANNYI* (Delattre and Bourcier).

Three adults, two males and a female, Mt. Sapo and Esnápe, April, 1922.

The two males are exceptionally fine ones, with very long tails, long bills and of very dark rich coloration. At first we thought they might represent a new form, but afterwards decided to consider them handsome old adults of true *fannyi*.

MEASUREMENTS.

No.	SEX.	LOCALITY	WING	TAIL	CULMEN TO BASE
87,556	♂ ad.	Mt. Sapo	53	45	25.
87,555	♂ ad.	Rio Esnápe	53	44	23.5

54. *HELIOTHRIX BARROTI* (Bourcier and Mulsant).

Two adults, females, Mt. Sapo and Rio Esnápe, April, 1922.

These lovely hummers were seen very occasionally and then only when they came to bathe in the streams near camp. They hovered motionless over the brook for a few seconds and then dipped hurriedly up and down into the cool, clear water perhaps half a dozen times and then disappeared. By watching the pools during the late afternoon the two specimens, both females, were secured.

FORMICARIIDAE.

55. *CYMBILANIUS LINEATUS FASCIATUS* Ridgway.

One adult male, Jesusito, 9 April, 1922.

Nineteen species of ant-thrushes were taken. There is nothing special to remark as to their habits. All are found walking with characteristic tread on the floor of the deep, dark forest. Many were shot by the Indians who were especially useful in getting these birds as they made no noise while walking and one and all had keen eyesight. There was great rivalry to see who could secure the largest day's bag, tobacco being the reward.

56. *THAMNISTES ANABATINUS CORONATUS* Nelson.

Two adults, male and female, Mt. Sapo, 20, 22 April, 1922.

57. *THAMNOPHILUS PUNCTATUS ATRINUCHA* Salvin and Godman.

Thirteen adults, both sexes, Mt. Sapo, Rio Esnápe, and Jesusito, April, 1922.

58. *DASYITHAMNUS PUNCTICEPS PUNCTICEPS* Salvin.

Four adults, one male, three females, Mt. Sapo, April, 1922.

59. *MYRMOTHERULA BRACHYURA* (Hermann).

One adult male, Jesusito, 7 April, 1922.

60. *MYRMOTHERULA SURINAMENSIS PACIFICA* Hellmayr.

Three specimens, adult male and female and immature male, Mt. Sapo and Jesusito, April, 1922.

61. *MYRMOPAGIS AXILLARIS ALBIGULA* (Lawrence).

Twenty-eight specimens, adults of both sexes and immature males. Mt. Sapo, Rio Esnápe, and Jesusito, April, 1922.

This and the succeeding were two of the very commonest forest species. A very large series could easily have been collected.

62. *MYRMOPAGIS FULVIVENTRIS* (Lawrence).

Sixteen adults, both sexes, Mt. Sapo, Rio Esnápe, and Jesusito, April, 1922.

63. *MICRORHOPIAS BOUCARDI CONSOBRINA* (Slater).

Four adults, three males and a female, Mt. Sapo and Jesusito, April, 1922.

64. *CERCOMACRA TYRANNINA TYRANNINA* (Slater).

Five adults, three males, two females, Rio Esnápe and Jesusito.

65. *MYRMECIZA LAEMOSTICTA PALLIATA* Todd.

Twelve adults, both sexes, Mt. Sapo, April, 1922.

Making due allowance for the difference in season,— Todd's original series, from Santander, Colombia, was taken from August to December, ours in April— this series is scarcely separable from the well-marked Colombian form, *palliata*. The character, of our skins, on the whole, is very slightly intermediate, for instance, the flanks and sides in our males are slightly darker and more reddish brown than in Todd's. This, however, is not so in the female kindly lent us by Todd. In one of our males the black of the throat ends abruptly at the upper chest, in the others it is more or less extended irregularly over the chest and upper breast.

66. *MYRMECIZA MACULIFER CASSINI* (Ridgway).

Thirteen adults, both sexes, Rio Esnápe and Jesusito, April, 1922.

67. *FORMICARIUS ANALIS PANAMENSIS* Ridgway.

Six adults, both sexes, Mt. Sapo, Rio Esnápe, and Jesusito, April, 1922.

One adult male gives a wing-length of 93 mm., the other three run from 85 to 88. In the two females it is 87 and 90 respectively.

This ant-bird called like a little tinamou. Its long clear whistle repeated *in crescendo* six or seven times was easily imitated and several times the bird was brought fairly near and a shot thus secured. In general, however, the species was much more shy than the others of the family.

68. *HYLOPHYLAX NAEVIOIDES NAEVIOIDES* (Lafresnaye).

Thirty-eight adults, both sexes, Mt. Sapo, Rio Esnápe, and Jesusito, April, 1922.

In the Birds of North and Middle America, Ridgway did not recognize the Costa Rican *Hylophylax naevioides capnitis* (Bangs). Now we have a very large series of each race and believe that the Costa Rican form can easily be distinguished from true *naevioides* of Panama. The characters originally claimed for the northern bird are slight, and perhaps only average characters, but besides these, the female of *capnitis* is much grayer, less buffy below and the spots on the chest much darker and more distinct, and in both sexes the subterminal dark band on the tail is narrower and the tip is darker more cinnamonous, less buffy or whitish.

This was another of the excessively common woodland species of which an enormous series might easily have been secured.

69. *ANOPLOPS BICOLOR BICOLOR* (Lawrence).

Five adults, both sexes, Mt. Sapo and Jesusito, April, 1922.

70. *PHAENOSTICTUS MACLEANNANI CHOCOANUS*, subsp. nov.

Three adults, two males and a female, Mt. Sapo and Rio Esnápe. April, 1922.

TYPE.—M. C. Z. 87,352 adult ♂, E. Panama: Mt. Sapo, 20 April, 1922. Barbour, Brooks, and Underwood.

CHARACTERS.—Similar to *P. m. macleannani* (Lawrence) of the Canal Zone, but much paler throughout; pileum much grayer, less brownish; front paler still, whitish gray; chest-band pale cinnamon-rufous and margins to feathers of back and lower underparts very pale buff.

MEASUREMENTS.

No.	SEX	LOCALITY	WING	TAIL	TARSUS	CULMEN TO BASE
87,352	♂	Mt. Sapo	94	89	33	21
87,353	♀	“ “	88	85	31	23
87,354	♂	Rio Esnápe	93	87	32	22

71. RHOPOTERPE STICTOPTERA Salvin.

Eight adults, both sexes, Mt. Sapo, Rio Esnápe, and Jesusito, April, 1922.

So far as we know this species has not been recorded from anywhere south of Nicaragua, yet we are unable to separate our eastern Panama skins from Nicaraguan specimens with which we have compared them.

72. PITTASOMA MICHLERI MICHLERI Cassin.

One adult female, Mt. Sapo, 21 April, 1922.

Although special effort was made to secure the large Grallaria-like birds, this was the only individual secured.

73. HYLOPEZUS PERSPICILLATA PERSPICILLATA (Lawrence).

Two adults, male and female, Rio Esnápe and Jesusito, April, 1922.

On geographical grounds these two skins must be referred to true *perspicillata*. Judged by characters alone one should be referred here and one to *H. perspicillata lizanoi* (Cherrie). In running through a large series of the latter we find all its characters to be very variable and the form seems hardly worthy of recognition.

FURNARIIDAE.

74. SCLERURUS MEXICANUS ANOMALUS, subsp. nov.

Two adults, male and female, Mt. Sapo, April, 1922.

TYPE.—M. C. Z. 87,367 adult ♀, E. Panama: Mt. Sapo, 25 April, 1922. Barbour, Brooks, and Underwood.

CHARACTERS.—Similar in size and proportions to *S. m. pullus* Bangs of Costa Rica and Chiriqui but coloration much paler; the upperparts and belly warm sepia or Vandyke-brown; rump and upper tail-coverts chestnut. Similar also to *S. m. mexicanus* Sclater but bill much shorter and stouter and throat and chest paler (not far from Sanford's-brown in the new form, and from chestnut or tawny chestnut in *mexicanus*) and more sharply defined against the color of the lower underparts.

MEASUREMENTS.

No.	SEX	LOCALITY	WING	TAIL	TARSUS	CULMEN
87,367	♀	Panama, Mt. Sapo	78	48	22.	23.
87,366	♂	" " "	80	50	21.	—
107,336	♂	" Loma del Leon	79	52	22.	23.5
107,337	♂	" " " "	82	54	22.5	24.

REMARKS.—This form, which usually has been referred to *S. m. mexicanus* in spite of the fact that a much darker subspecies, *C. m. pullus* Bangs, occurred in Costa Rica and Chiriqui cutting the range in two, appears to be quite distinct. It differs from true *mexicanus* conspicuously, the latter form having a much longer and more slender bill (culmen to base, 26 to 27.5 mm.) and in the color of the throat and chest which are paler and brighter in the Panama bird. In western Colombia another dark form *C. m. obscurior* Hartert occurs, even darker than *pullus* and dusky rather than brownish on the lower underparts. With the few Guatemalan specimens seen by us, we are unable to separate *S. m. certus* Chubb of Guatemala from true *mexicanus*. We have not seen any skins from Amazonia. As we know the species the northern races stand thus:—

1. *Sclerurus mexicanus mexicanus* Selater.
Southeastern Mexico to Honduras.
2. *Sclerurus mexicanus pullus* Bangs.
Costa Rica and Chiriqui.
3. *Sclerurus mexicanus anomalus* Bangs and Barbour.
Panama, Canal Zone to extreme eastern Panama.
4. *Sclerurus mexicanus obscurior* Hartert.
Northwestern Ecuador and western Colombia.

In the field we were not able to observe any great differences in habits of some of the furnariids from the dendrocolaptids.

75. *SCLERURUS GUATEMALENSIS GUATEMALENSIS* (Hartlaub).

Six adults, both sexes, Mt. Sapo, Rio Esnápe, and Jesusito, April, 1922.

These skins are somewhat darker, more olive-brown, less rufous brown than specimens from Guatemala and British Honduras; they can, however, be matched by certain examples from southwestern Costa Rica and western Panama. They are probably somewhat intermediate tending a little toward *S. g. salvini* Salvadori and Festa of western Ecuador, which, however, we have not seen.

76. *XENOPS GENIBARBUS RIDGWAYI* Hartert and Goodson.

Three specimens, two males and a female, Mt. Sapo and Jesusito, April, 1922.

77. PHILYDOR FUSCIPENNIS Salvin.

One somewhat immature female of this very rare species was secured at Río Esnápe, 3 April, 1922.

78. AUTOMOLUS PALLIDIGULARIS PALLIDIGULARIS Lawrence.

Four adult males, Mt. Sapo and Río Esnápe, April, 1922.

DENDROCOLAPTIDAE.

79. DENDROCOLAPTES SANCTI-THOMAE SANCTI-THOMAE (Lafresnaye).

Two adult females, Jesusito, April, 1922.

These specimens are wholly referable to true *sancti-thomae* from which they differ only in slightly darker chestnut tails, a difference perhaps due to being freshly made skins as compared with old material. The range of *sancti-thomae* therefore extends through eastern Panama to western Colombia (see Chapman, Bull. Amer. mus. nat. hist., 1917, 36, p. 427) and north probably along the Caribbean slope of Panama and Costa Rica, just to southeastern Mexico. The well-defined *D. s. hesperius* Bangs, occupies a narrow belt in western Panama, western Costa Rica, and western Nicaragua.

The six forms of dendrocolaptids collected all had more or less similar habits. They have, as is well known, the habit of creepers but often drill vigorously with their bills, making quite as much noise as a small woodpecker. Although we saw several columns of army-ants we did not find these birds coming to the ground to feed upon them or the insects which they stir about as the formicariids naturally did.

80. XIPHORHYNCHUS LACHRYMOSUS LACHRYMOSUS (Lawrence).

One adult female, Mt. Sapo, 24 April, 1922.

81. XIPHORHYNCHUS NANUS NANUS (Lawrence).

Two adult males, Jesusito, April, 1922.

82. GLYPHORHYNCHUS CUNEATUS PECTORALIS Scater and Salvin.

Eleven adults, both sexes, Mt. Sapo, Río Esnápe, and Jesusito, April, 1922.

83. *DENDROCIINCLA LAFRESNAYEI* RIDGWAYI Oberholser.

Six adults, both sexes, Mt. Sapo, and Jesusito, April, 1922.

84. *DENDROCIINCLA HOMOCHROA RUFICEPS* Selater and Salvin.

One adult female, Mt. Sapo, 21 April, 1922.

COTINGIDAE.

85. *COTINGA NATTERI* (Boissoneau).

Ten specimens, adults of both sexes and immature males, Mt. Sapo, April, 1922.

This splendid bird was only taken at the "Cotinga Tree" near the Mt. Sapo camp. Shortly after this camp was located two long trails were cut leading up two high hog-back spurs of the main range. One of these led to the ridge called La Jarcia where trees were cut down until a fine look-out was cleared. From this look-out a maze of steep crests and valleys was disclosed. We were always looking for white Cotingas and several were seen from our clearing evidently visiting a feeding tree but it stood in an absolutely inaccessible spot. After this, search for feeding trees was redoubled and before many days a tree with ripe fruit, a small fig evidently, was found on another ridge only a mile or so from the camp. After this tree was located some one or other of the party kept a constant watch there every day from dawn until dark. No white Cotingas came to the tree but ten blues were collected. The buccos and Cotingas at large visited the tree at three very definite times of day. A few in the early morning but most about 8.30 A.M., then there was a lull and the tree had only an occasional visitor, usually some migrant warbler, until noon when for about an hour there was abundant visitation, thereafter little appeared until about 4 P.M. This last feeding period was distinctly the least important of the three.

The birds came to the tree in perfect silence simply appearing from out of the vast immensity of the surrounding forest, remaining a few moments and then leaving as they came. Several other feeding trees were seen but they grew on such precipitous slopes that retrieving the fallen birds would have been impossible, had one been able to find a place to stand and shoot once the tree was reached. It is sometimes easy to locate a feeding tree from a distance but identifying the same tree when one is close to it in the forest is often next to impossible.

86. *ATILA CITREOPYGA CITREOPYGA* (Bonaparte).

One adult male, Mt. Sapo, 20 April, 1922.

A single example of this species appeared one morning and no other was seen.

87. *LIPAUGUS HOLERYTHRUS HOLERYTHRUS* Selater and Salvin.

One adult male, Mt. Sapo, 24 April, 1922.

This skin is slightly richer and more rusty in color than northern specimens (Guatemala to Costa Rica) and thus approaches *L. holerythrus rosenbergi* Hartert, type-locality Rio Dagua, western Colombia.

These reddish cotingas came to the tree quite often and frequently in company with other species, so they were not always collected.

This species and the following are beyond doubt really congeneric.

88. *LATHRIA UNIRUFA CASTANEOTINCTA* Hartert.

Six adults, both sexes, Mt. Sapo, April, 1922.

Chapman says he cannot distinguish *L. u. clara* of Panama from *L. u. castaneotincta* of western Colombia and northeast Ecuador. The present series bears out what he has said, though Panama birds are on the whole a trifle, either paler or duller than those from western Colombia.

The larger "red cotinga" was the one species of the family that was sometimes identified and shot in the forest away from a feeding tree.

89. *PACHYRHAMPHUS CINNAMOMEUS* Lawrence.

Three adults, two males and a female, Jesusito, April, 1922.

This species was only killed in a feeding tree on the summit of a steep hill near our upper Jesusito camp.

90. *TITYRA SEMIFASCIATA COLUMBIANA* Ridgway.

One adult male, Mt. Sapo, 24 April, 1922.

This specimen is rather small, the wing-length being only 116 mm. The tail-pattern is typically that of *columbiana*.

This bird appeared once, almost at dusk, and the flash of white made us think that at last the *pajaro del Espiritu Santo* had appeared.

PIPRIDAE.

91. *MANACUS VITELLINUS VITELLINUS* (Gould).

Six adults, both sexes, Rio Esnápe and Jesusito, April, 1922.

A common species in thickets along the stream-courses.

92. *PIPRA ERYTHROCEPHALA ACTINOSA*, subsp. nov.

Thirty specimens, adults of both sexes, and young males, Mt. Sapo, Rio Esnápe, and Jesusito, April, 1922.

TYPE.—M. C. Z. 87,170 adult ♂, E. Panama, 21 April, 1922. Barbour, Brooks, and Underwood.

CHARACTERS.—Similar to *P. c. erythrocephala* (Linné) but larger. The adult male, similar in color; adult female slightly paler olive-green above and slightly paler and grayer, less yellowish olive below. Wing in adult male, 58.01 (57–59); fifteen specimens.

REMARKS.—After recognizing the slightly different form we have just named, *Pipra erythrocephala* is made up of four geographic races, as follows:—

1. *Pipra erythrocephala erythrocephala* (Linné).
Surinam, Cayenne, Venezuela, Trinidad, etc. Small wing in adult male, 54.55 (53–56); head intense orange-yellow.
2. *Pipra erythrocephala actinosa* Bangs and Barbour.
Eastern Panama to the Santa Marta Region of Colombia. Larger wing in adult male, 58.01 (57–59), male similar in color, female slightly paler.
3. *Pipra erythrocephala flammiceps* Todd.
Santander, Colombia. Small wing in adult male, 53–54; head darker, more reddish orange.
4. *Pipra erythrocephala berlepschi* Ridgway.
Bogota Region of Colombia to Peru. Large wing in adult male 61., (60–62); head pale yellow.

In all the forms the adult female is a little larger than the male, about 2 mm. on the average, in the length of the wing.

These little manikins were most amusing birds to watch. While on a long tramp one experience with these lively little feathered imps was most pleasing. It was late afternoon when attracted by a most surprising whirring and snapping of wings; and searching about for a moment a low tree was found literally swarming with yellow-headed

manikins. They had evidently met by design and were strutting, bowing, raising and lowering their wings and generally going through such antics as one only expects from Birds of Paradise. No females were anywhere about and the observation was never repeated though the tree was revisited on various occasions.

93. *PIPRA VELUTINA MINUSCULA* Todd.

Ten adults, both sexes, Mt. Sapo and Jesusito, April, 1922.

Our skins are wholly referable to this well-marked form, lately described by Todd; its characters were, however, long before dwelt on at length by Hellmayr, who refrained from giving it a name only because he had no skins from Veragua, the type-locality of *P. velutina velutina* Berlepsch.

The little Blue-headed Manikin frequently came to the "Cotinga tree" but many specimens were taken elsewhere as well.

94. *CORAPIPO ALTERA ALTERA* Hellmayr.

Four adult males, Mt. Sapo, April, 1922.

We agree with Carriker that the short first primary is a character that separates *C. altera altera* Hellmayr and *C. altera heteroleuca* Hellmayr specifically from *C. leucorrhoea* (Sclater).

For some reason only four specimens of this very conspicuous bird were found, all in a small low coppet near camp.

95. *SCOTOIHORUS TURDINUS STENORHYNCHUS* (Sclater and Salvin).

Five adults, both sexes, Mt. Sapo, Rio Esnápe, and Jesusito, April, 1922.

96. *SAPAYOA AENIGMA* Hartert.

Eight adults, both sexes, Mt. Sapo, April, 1922.

This series of full plumaged spring birds, shows that the male (besides having a semiconcealed yellow crest which the female does not possess) is paler and much more yellowish olive-green than the female, especially on the underparts, the throat and chest being often quite yellow.

This species was abundant and confined to the stream-bottoms.

97. *LANIOCERA RUFESCENS* (Sclater).

One adult female, Mt. Sapo, 22 April, 1922.

This bird was taken at the "Cotinga Tree" in company with the

various species of what our outfit came to call "red cotingas." It is almost impossible to believe that the bird does not really belong in that family.

TYRANNIDAE.

98. *ONYCHORHYNCHUS MEXICANUS FRATERCULUS* Bangs.

Nine adults, both sexes, Mt. Sapo, Rio Esnápe, and Jesusito, April, 1922.

The Paradise flycatchers were abundant and widespread. One observation at the time seemed very striking. Two birds were captured only slightly wounded, each acted in exactly the same way. The mouth was opened wide, the great crest fully expanded and then the head was slowly waved from side to side. Exactly the same motion was often enacted by a large rose-crested cockatoo which was shot and wounded near Wahaai, Ceram. A captive cockatoo subsequently repeated the minatory gestures whenever it was shown a snake. It is curious that birds having wide transverse crests but so far separated in the system should use such a similar method of attempting to terrify an enemy.

99. *ONCOSTOMA OLIVACEUM* (Lawrence).

Two adults, male and sex undetermined, Rio Esnápe and Jesusito April, 1922.

It is surprising that this was found to be a rare bird in eastern Panama, it is so common throughout most of its range.

100. *PLACOSTOMUS CORONATUS SUPERCILIARIS* (Lawrence).

Eight adults, both sexes, Mt. Sapo and Rio Esnápe, April, 1922.

Nests made of a filamentous lichen, great pendulous purses quite without form, were observed hanging from limbs above all the streams. None were occupied but the Indians said that they were made by this boat-billed flycatcher, which was rather abundant.

101. *CRASPEDOPRION OLIVACEUS BARDUS*, subsp. nov.¹

Eight adults, seven males and a female, Mt. Sapo, Rio Esnápe, and Jesusito, April, 1922.

TYPE.—M. C. Z. 87,029 adult ♂, E. Panama: Mt. Sapo, 20 April, 1922. Barbour, Brooks, and Underwood.

¹ Bardus, a um. Inactive, dull, sluggish, etc.

CHARACTERS.—Similar to *Craspedoprion olivaceus acuinotialis* (Sclater) of eastern Ecuador and eastern Colombia, but larger; upperparts brighter, yellower, less dusky olive-green; chest and breast paler, yellower; lower underparts much brighter yellow. Similar also to *C. o. flavus* Chapman of the Santa Marta region of Colombia and of about the same size; the upperparts similar, but underparts very much deeper and richer yellow, (lemon-yellow), on the belly; the olivaceous flammulations of chest and breast darker, less grayish. Wing in seven males, 74–77; in one female 71.

REMARKS.—In 1914 when Chapman named his *C. o. flavus* from Santa Marta he gave its range as extending north to Panama, explaining that lack of proper material had caused the Panama bird to be called *C. acuinotialis*. At that time Chapman had two Panama skins only. Since then the American Museum has received a series from eastern Panama collected by Richardson, these have kindly been lent to us and agree exactly with ours, and differ much from a good series from Santa Marta lent by the Carnegie Museum (W. E. C. Todd).

The color of the underparts in *flavus* of Santa Marta is much nearer to the color of the underparts in *C. olivaceus guianensis* McConnell of the Guianas and Venezuela (the forms of course differ in other respects) than it is to the rich, bright yellow of the lowerparts in the new bird from eastern Panama.

102. TYRANNISCUS VILISSIMUS PARVUS (Lawrence).

One adult male, Mt. Sapo, 23 April, 1922.

This species may well be more abundant than the appearance of only a single specimen in the collection would indicate. Such excessively small birds are really only found by chance.

103. MYIOZETETES CAYANENSIS HARTERTI Bangs and Penard.

Three adults, two males and a female, Jesusito, April, 1922.

Though somewhat intermediate, these skins are nearer to *harterti* than to *M. c. hellmayi*, Hartert and Goodson, of western Colombia and northwest Ecuador.

This is one of a number of species which were only found about the lower Jesusito camp where there was more or less of a clearing near by. It was not a bird of the forest at all.

104. MYIOZETETES GRANADENSIS Lawrence.

Two adults, male and female, Jesusito, April, 1922.

These are slightly darker above and perhaps a little deeper yellow below than Canal Zone birds, in this respect being like skins from western Colombia. This difference having already been pointed out by Chapman. It seems to us, as it did to Chapman, that the form is not worthy of recognition.

This is another species, with king bird-like habits to which the same remarks apply as the preceding.

105. PIPROMORPHA OLEAGINEA PARCA Bangs.

Five adults, both sexes, Mt. Sapo, April, 1922, Rio Esnápe, and Jesusito.

106. MIONECTES OLIVACEUS HEDERACEUS Bangs.

Four adults, both sexes, Mt. Sapo, April, 1922.

These specimens are much nearer *hederaceus* of western Colombia than they are to *M. o. olivaceus* Lawrence of Costa Rica and western Panama.

107. CNIPODECTES SUBBRUNNEUS SUBBRUNNEUS (Sclater).

Four males, Rio Esnápe, April, 1922.

All large birds, (wing, 94-97 mm.).

Ridgway recognized a large and small species occurring together. Hellmayr claims that the small examples are immature, but retains the name *C. s. minor* Sclater for the form ranging from eastern Peru to western Brazil, which he says differs slightly in color.

This was an inhabitant of the deepest woods, whereas very few other members of the family were found there.

108. MYIOBIUS ATRICAUDUS ATRICAUDUS Lawrence.

Two adults, male and female, Jesusito, April, 1922.

A common bird of the open clearings, this and many other tyrant birds abound near the Indian's field, but as we confined nearly all of our work to the forest, few appear in the collection.

109. MYIODIUS SULPHUREIPYGIUS AUREATUS Bangs.

Thirteen adults, both sexes, Mt. Sapo, Rio Esnápe, and Jesusito, April, 1922.

This species occurred not only about the open clearings but where there were small sun-lit openings along the streams as well.

110. *TERENOTRICCUS ERYTHRURUS FULVIGULARIS* (Salvin and Godman).

Five adults, both sexes, Mt. Sapo, Rio Esnápe, and Jesusito, April, 1922.

111. *NUTTALLORNIS BOREALIS MAJORINUS* Bangs and Penard.

One adult female, Mt. Sapo, 24 April, 1922.

One afternoon a small, dull colored bird came to the "Cotinga Tree," fed upon the fruit and was promptly shot. When picked up it proved to be this familiar compatriot. The date seems rather late.

112. *MYIOCHANES VIRENS* (Linné).

Three adults, male and two females, Mt. Sapo and Jesusito, April, 1922.

113. *MYIARCHUS CRINITUS CRINITUS* (Linné).

One adult female, Jesusito, 9 April, 1922.

114. *MYIARCHUS FEROX PANAMENSIS* (Lawrence).

One adult male, Mt. Sapo, 26 April, 1922.

115. *MYIARCHUS TUBERCULIFER NIGRICEPS* Sclater.

Four adult females, Rio Esnápe and Jesusito, April, 1922.

Another of the species most characteristic of the clearings.

116. *MYIODYNASTES LUTEIVENTRIS* Sclater.

Three adults, male and two females, Mt. Sapo and Jesusito, April, 1922.

These birds were shot from a feeding tree which was often visited from the upper Jesusito camp. The tree was very high and many birds escaped. This species was a frequent visitor and fed greedily on the fruit. The specimens shot staining freely about the vent from the fruit-juices after the manner of some Cotingas. It is hard to believe that this species is not in very truth a Cotinga and not a tyrannid at all. This, indeed, seems about certain.

117. *MYIODYNASTES MACULATUS NOBILIS* (Sclater).

One adult female, Mt. Sapo, 24 April, 1922.

This example agrees in all of the distinguishing characters, longer wing (109 mm.); olive not cinnamomeous pileum; much paler and on primaries much narrower, wing-edgings, and much more narrowly streaked undertail coverts, with *M. m. insolens* Ridgway of southeast Mexico. If that form were migratory, which we believe it is not, this skin would of course be referred to it. Probably our bird is in reality an aberrant example of *nobilis* which approaches very close to *insolens* through individual variation. We have often seen such instances before, sometimes with island forms.

This is another species from the "Cotinga Tree" which may be misplaced in the system.

118. *TYRANNUS TYRANNUS* (Linné).

Three adults, two males and a female, Jesusito, April, 1922.

This and the following were common yellow-billed king birds of the clearings.

119. *TYRANNUS MELANCHOLICUS CHLORONOTUS* Berlepsch.

Three adults, two males and a female, Jesusito, April, 1922.

OXYRUNCIDAE.

120. *OXYRUNCUS BROOKSI*, sp. nov.

Three adults, male and two females, Mt. Sapo, April, 1922.

TYPE.—M. C. Z. S7,199 adult ♂, E. Panama: Mt. Sapo, 25 April, 1922. Barbour, Brooks, and Underwood.

CHARACTERS.—Similar to *Oxyruncus frater* (Sclater and Salvin) of Costa Rica and western Panama, but at once distinguished by having white, not yellow, underparts; similar also to *O. hypoglaucus* (Salvin and Godman) of British Guiana and with white underparts as in that form, but with upperparts, paler and brighter, more yellowish, olive-green; larger wing-coverts broadly margined with light yellow; secondaries also widely margined terminally with light yellow; underparts with smaller and fewer blackish spots (than in any form), which became very sparse and indistinct on flanks and sides; flanks and sides washed with dull pale yellow; tail shorter.

MEASUREMENTS.

No.	SEX	WING	TAIL	TARSUS	EXPOSED CULMEN
87,199	♂	90	52	19	15.5
87,198	♀	88	50	19	16.
87,200	♀	91	51	19	17.

REMARKS.— It gives us great pleasure to name this fine new form in honor of W. Sprague Brooks, who did so much to make the trip a success.

To find in eastern Panama a very distinct and white-bellied sharp-bill was indeed a surprise. We are, however, rather inclined to believe, that the new form, in spite of its white underparts is more nearly related to the yellow-bellied *frater* than it is to the only other white-bellied form, *hypoglaucus* of Mt. Roraima.

We have not followed the custom of modern ornithologists in allowing subspecific rank only, to the various forms of the sharp-bill. The discontinuous distribution of the species in tropical America, together with the excellent characters shown, may well, we think, be used as an argument for considering them all full species. The birds have the habits of Cotingas and these specimens came to the feeding tree in company with several species of Cotingidae. It is not improbable that the Oxyruncidae is scarcely separable from the Cotingidae.

TURDIDAE.

121. *HYLOCICHLA USTULATA SWAINSONII* (Cabanis).

Four adults, both sexes, Mt. Sapo, Rio Esnápe, and Jesusito, April, 1922.

122. *TURDUS TRISTIS DAGUAE* Berlepsch.

Five specimens, three adults, two males and a female and two spotted young, Mt. Sapo, April, 1922.

A deep wood thrush with the actions and appearance of our familiar robin but naturally in a very strange setting.

TROGLODYTIDAE.

123. *PHEUGOPEDIUS FASCIATO-VENTRIS ALBIGULARIS* (Sclater).

One adult, male, Jesusito, 8 April, 1922.

Most of the tropical wrens encountered were birds of the scattered

patches of thick coppet and of the tangles of vines and creepers in the deep lowland forest. Some species, however, were decidedly terrestrial with the habits of ant-thrushes.

124. *HENICORHINA LEUCOSTICTA DARIENENSIS* Hellmayr.

Eight adults, both sexes, Rio Esnápe and Jesusito, April, 1922.

125. *THRYOPHILUS NIGRICAPILLUS SCHOTTH* (Baird).

Four adults, both sexes, Jesusito, April, 1922.

126. *THRYOPHILUS GALBRAITHII GALBRAITHII* (Lawrence).

Two adults, male and female, Mt. Sapo, 25 April, 1922.

Though these skins just match some individuals from the Canal Zone, they are, however, as Chapman has already pointed out, slightly darker and less rufescent than the average from that region; wherefore we agree that the differentiation is too trifling to be considered of subspecific value.

127. *MICROCERCULUS PHILOMELA LUSCINIA* Salvin.

Two specimens, male and female, Mt. Sapo, April, 1922.

One of these, an adult female, 86,985, has the feathers of the chest and breast, gray with W-shaped markings of grayish white at their tips, below which is a dusky spot. It is somewhat closely similar to a specimen (121,307 M. C. Z.) from El General, Costa Rica. The other, a male, perhaps somewhat immature, though its back is plain Vandyke-brown, without dusky bars, has the chest and breast dark brownish gray, the whole underparts, crossed by fine, faint dusky bars. This skin also is very much like some birds from Costa Rica. We follow Carriker, (*Birds of Costa Rica*, p. 753) in allowing but one form to Costa Rica and Panama, which for the present we consider a subspecies of *philomela* of Guatemala. We have had for comparison one specimen only, an immature individual from Guatemala, which matches closely some of the Costa Rican immatures.

This curious little creature has the mouse-like habits of the tiny rails only it was a denison of the deepest, darkest, high and rather open woods. Elsewhere it would never have been seen in any case.

128. *LEUCOLEPIS LAWRENCHII ASSIMILIS* Todd.

Twelve specimens, adults and immature, both sexes, Rio Esnápe April, 1922.

CORVIDAE.

129. *CYANOCORAX AFFINIS ZELEDONI* Ridgway.

Five adults, both sexes, Rio Esnápe and Jesusito, April, 1922.

Though really a bird of the banana patches and clearings, a few specimens were seen and shot in the forest. It is a favorite pet with the Indians and a good many find their way, alive, to the market in Panama, where they are promptly bought up.

VIREONIDAE.

130. *VIREOSYLVA FLAVOVIRIDIS FLAVOVIRIDIS* Cassin.

One adult female, Mt. Sapo, 25 April, 1922.

131. *VIREOSYLVA OLIVACEA* (Linné).

Three adults, two males and a female, Mt. Sapo, April, 1922.

At times these vireos simply swarmed in the top of our "Cotinga Tree." We were often fooled into shooting one of them by mistake for some more desirable species which had suddenly entered their company.

132. *PACHYSYLVA MINOR* Berlepsch.

One adult male, Mt. Sapo, 21 April, 1922.

This is apparently a new record for Panama. Our skin has been carefully compared with two specimens from Ecuador, (one from Naranjo, Province of Guayas, the other from Santa Rosa, Province del Oro), kindly lent us by the American Museum of Natural History of New York; it wholly agrees with these.

133. *PACHYSYLVA OCHRACEICEPS BUTUNENSIS* (Hartert).

Three adults, male, female and sex undetermined, Mt. Sapo, April, 1922.

MEASUREMENTS.

No.	SEX	WING	TAIL	TARSUS	CULMEN
87,014	♂	59	37	16	14.
87,013	♀	61	40	16	14.5
87,015	—	60	30	15.5	14.5

Nelson in describing his *P. o. brevipennis* from the Canal Zone, Panama, named an intermediate form, almost exactly intermediate between *P. o. butunensis* and *P. o. ochraceiceps* (Selater) (or *P. o. pallidipectus* Ridgway, if the slight and inconstant characters that distinguish the Costa Rican form be considered sufficient to hold that subspecies). Our skins differ from a topotype of *P. o. brevipennis*, by having the whole upperparts, posterior to the tawny crown, including the wing-coverts, olive-green with no brownish tinge, and the under wing-coverts and inner edges of the primaries much brighter yellow. A skin from Cana, extreme eastern Panama (Coll. U. S. Biol. Surv.) is quite like ours.

HIRUNDINIDAE.

134. STELGIDOPTERYX RUFICOLLIS UROPYGIALIS (Lawrence).

Two adult males, Jesusito, April, 1922.

Swifts and swallows were often seen high above the forest and some swallows flew about the Indian plantations. The only swallows seen in the forest were some which flew in and out of the dark woods near the lower Jesusito clearing. They always entered and emerged from the thick vegetation near the ground and at exactly the same spot, so we assumed they were nesting, but the nests were never located.

MNIOTILTIDAE.

135. DENDROICA CASTANEA (Wilson).

Seven specimens, both sexes, Mt. Sapo, Rio Esnápe, and Jesusito, April, 1922.

These are all in complete or nearly complete nuptial plumage.

The last date on which Bay-breasted warblers appeared in the "Cotinga Tree" was April 25th.

136. WILSONIA CANADENSIS (Linné).

Five adults, both sexes, Mt. Sapo, April, 1922.

Every one of these birds was taken on April 22nd. None were seen before or after that date.

COEREBIDAE.

137. CHLOROPHANES SPIZA ARGUTA, subsp. nov.

One adult female, Mt. Sapo, 20 April, 1922.

TYPE.—M. C. Z. 108,199 adult ♂, W. Panama: Divala, 29 October, 1900. W. W. Brown, Jr.

CHARACTERS.—Similar in size and proportions to *C. spiza exsul* Berlepsch of western Ecuador and western Colombia, but adult male, much darker green, in color as in *C. spiza guatemalensis* Sclater, Guatemala to Nicaragua, but at once distinguished from that form by smaller size and much shorter bill.

REMARKS.—This new form ranges from Costa Rica (possibly from western Nicaragua) to eastern Panama. Its characters were long ago pointed out by Bangs, (Proc. Biol. soc. Washington, 29 June, 1906, 18, p. 185) who, however, referred it to *exsul* having but one skin of that form for comparison. Additional material shows *exsul* to be decidedly paler green. This has also lately been pointed out by Lönnberg (Arkiv för zool., 1922, 14, no. 25, p. 83).

C. s. spiza Linné can be distinguished without difficulty from either *exsul* or this new form. The decidedly bluish color of *spiza*, especially of the median lower underparts, always distinguishing it.

Another species taken in the "Cotinga Tree" and one which we probably should have collected more often, except that these small visitors were often mistaken, unless they got into the lower branches, for migrant vireos and warblers.

138. DACNIS CAYANA ULTRAMARINA (Lawtence).

Four specimens, three immature males and a female, Mt. Sapo, April, 1922.

These were occasionally killed by a chance shot taken at small birds seen flitting about the very high trees. We never got an adult male, much to our disappointment.

139. COEREBA MEXICANA MEXICANA (Sclater).

One adult male, Mt. Sapo, 25 April, 1922.

This single skin is almost intermediate between *C. m. mexicana* and *C. m. columbiana* Cabanis but is perhaps somewhat nearer the former.

This was the only *Coereba* killed, as we did no collecting about the plantations, feeling that our best chance of getting rarities lay in concentrating every effort to get birds of the high forest.

ICTERIDAE.

140. *ZARHYNCHUS WAGLERI WAGLERI* (Gray).

One adult male, Jesusito, 14 April, 1922.

We were constantly finding colonies of *oropendulas* but generally neglected to bring in specimens thinking that this could always be done with the result that it was usually left undone.

141. *CACICUS CELA VITELLINUS* Lawrence.

Five adults, both sexes, Rio Esnápe and Jesusito, April, 1922.

142. *ICTERUS GALBULA* (Linné).

One adult male, Jesusito, 20 April, 1922.

A gorgeous bird came to one of the high feeding trees which we were watching and when shot proved to be this familiar species.

TANGARIDAE.

143. *TANGARA FULVICRISSA FULVICRISSA* (Sclater).

One adult female, Mt. Sapo, 23 April, 1922.

We cannot, with a single female, be sure as to the subspecies, but think our bird is referable to true *fulvicrissa* rather than to *T. f. omissa* (Hartert) of Colombia.

144. *TANGARA PALMERI* Hellmayr.

Three males, two adult, one immature and one skeleton, Mt. Sapo, April, 1922.

It was a great pleasure to have four of these lovely tanagers visit the "Cotinga Tree." All were secured. We never saw one elsewhere and they were quite new to the natives.

145. *TANGARA GYROLOIDES GYROLOIDES* (Lafresnaye).

One adult male, Mt. Sapo, 23 April, 1922.

This specimen belongs distinctly to this subspecies (according to

Hellmayr's ruling on the races of *gyroloides*) and not to *T. g. bangsi* of Costa Rica and western Panama.

To the favoring tree we also owe this, as well as the following, addition to the collection.

146. TANGARA INORNATA LANGUENS, subsp. nov.

One adult male, Mt. Sapo, 25 April, 1922.

TYPE.—M. C. Z. 107,508 adult ♂, Panama: Loma del Leon, 25 March, 1900. W. W. Brown, Jr.

CHARACTERS.—Similar to *T. i. inornata* (Gould) of Colombia and of about the same size, but paler and duller gray throughout; the crown, rump, and upper tail-coverts much less decidedly bluish; throat, sides of neck and sides much paler and duller, less bluish gray.

REMARKS.—Since we must now separate the Panama bird from the true *T. inornata* (Gould) of Colombia, it becomes necessary to examine carefully the status of the name "*C. ornata*," introduced by Lawrence in 1861.

The name "*ornata*" should not be used for the Panama form of *Tangara inornata* (Gould) because it was merely a *lapsus* for *inornata*. This is quite obvious from the circumstances surrounding its introduction. All forms; intended as new, were printed in heavy type and Lawrence would hardly have called one of the plainest of all the Callistes, *ornata*.

In an earlier paper (Ann. Lyc. nat. hist. N. Y., 1861, 7, 298) Lawrence listed some Panama specimens of this species, under the name *Calliste inornata* Gould, expressing doubt as to whether they might not be the young of *C. franciscæ* with which he was unacquainted. In the later paper (*Loc. cit.*, p. 332) in which he used *ornata* he simply mentions that the acquisition of young birds of *C. franciscæ* established the *specific validity* of *ornata* (*i. e.* *inornata* the species). This was all he intended to do. He was not naming a new form. The characters he gave are purely those of the species and not of the Panama form. Indeed he does not in any manner refer to Panama specimens in this paper, unless by assuming a *lapsus* we revert to the specimens listed under *inornata* in his earlier paper.

This being the case, we are justified on purely nomenclatural grounds of designating the type-locality of *ornata* and rather than retain the name in its present doubtful state, we now designate the type-locality to be Bogotá, thus making *C. ornata* Lawrence a pure synonym of *C. inornata* Gould, regardless of whether the former be considered a *lapsus* or not.

We have selected a bird from the Canal Zone as the type of the new form so as to bring the type-locality as near to the northern and western end of the range of the subspecies as possible.

147. *THRAUPIS CANA CANA* (Swainson).

One young male from Mt. Sapo, 26 April, 1922.

We refer the bird to this form rather than to *T. c. diaconus* (Lesson), admitting, however, that with only one young bird in hand this allocation is little more than a guess.

Blue tanagers abound about the Canal Zone and all the clearings in Darien but are excessively rare in the woods. They are distinctly a bird of the savanna or drier districts.

148. *HETEROSPINGUS XANTHOPYGIUS* (Sclater).

One young specimen (sex not determined) in nestling plumage, Mt. Sapo, 25 April, 1922.

This fine little bird was one of a party which came to the "Cotinga Tree" but once. Other specimens were seen about the flowers on another tree-top which could not be approached. They reminded one of the Cuban oriole in habits.

149. *RAMPHOCELUS DIMIDIATUS DIMIDIATUS* Lafresnaye.

Two specimens, an immature male and adult female, Mt. Sapo, April, 1922.

A common species outside the forested area. *R. icterocephalus* was also constantly seen about the Darien "platanales" but none were killed.

150. *TACHYPHONUS LUCTUOSUS PANAMENSIS* Todd.

Two adult males, Rio Esnápe and Jesusito, April, 1922.

151. *EUCOMETIS CRISTATA CRISTATA* (Du Bus).

Eight adults, both sexes, Mt. Sapo, Rio Esnápe, and Jesusito, April, 1922.

152. *CHLOROTHRAUPIS OLIVACEA* (Cassin).

Eleven adults, both sexes, Mt. Sapo, April, 1922.

153. *MITROSPINGUS CASSINII CASSINII* (Lawrence).

Three adults, two males and a female, Mt. Sapo, April, 1922.

Never seen except when a small band visited the Mt. Sapo "Cotinga Tree."

FRINGILLIDAE.

154. *ARREMON AURANTIROSTIS STRICTOCOLLARIS* Todd.

Three adults, two males and a female, Rio Esnápe, April, 1922.

This fine finch was far more often seen about the edges of the clearings than in the heavy woods.

155. *SPOROPHILA AURITA AURITA* (Bonaparte).

One female, Mt. Sapo, 25 April, 1922.

156. *CYANOCOMPSA CYANOIDES CYANOIDES* (Lafresnaye).

One adult male, Rio Esnápe, 3 April, 1922.

157. *PITYLUS GROSSUS SATURATUS* Todd.

Three adults, two males and a female, Mt. Sapo and Rio Esnápe, April, 1922.